

**What is claimed is:**

1           1. A projector capable of detecting remaining  
2     lifetime of the light source lamp therein, comprising:  
3         an image projection device having a light source  
4         lamp with a pair of lamp electrodes;  
5         a detection device for detecting a voltage across  
6         the lamp electrodes;  
7         an analog-to-digital converter for converting the  
8         voltage to a digital value; and  
9         a control unit for comparing the digital value with  
10        a relational table to calculate the remaining  
11        lifetime of the lamp.

1           2. The projector as claimed in claim 1, further  
2     comprising a timer for accumulating the time used of the  
3     lamp, and the control unit comparing the digital value  
4     with the relational table when the time used of the lamp  
5     exceeds a first predetermined time.

1           3. The projector as claimed in claim 1, further  
2     comprising a memory unit for storing the relational  
3     table.

1           4. The projector as claimed in claim 1, wherein  
2     the control unit further outputs a warning signal when  
3     the lifetime of the lamp is less than a predetermined  
4     time.

1           5. The projector as claimed in claim 1, wherein  
2     the relational table reflects the relationship between

3 the remaining lifetime and the voltage across the lamp  
4 electrodes of the lamp.

1 6. The projector as claimed in claim 1, wherein,  
2 in the lamp, the voltage across the lamp electrodes  
3 increases as time used of the lamp increases.

1 7. A method of detecting the remaining lifetime of  
2 a light source lamp, comprising  
3 measuring a voltage across the lamp electrodes of  
4 the light source lamp;  
5 converting the voltage to a digital value; and  
6 comparing the digital value with a relational table  
7 to calculate the remaining lifetime of the  
8 lamp.

1 8. The method as claimed in claim 7, further  
2 comprising a step of detecting the time used of the lamp.

1 9. The method as claimed in claim 7, further  
2 comprising a step of displaying the remaining lifetime of  
3 the lamp.

1 10. The method as claimed in claim 7, further  
2 comprising a step of outputting a warning signal when the  
3 remaining lifetime is less than a predetermined time.

1 11. The method as claimed in claim 7, wherein the  
2 relational table reflects the relationship between the  
3 remaining lifetime and the voltages across the lamp  
4 electrodes of the lamp.